1046-03-118 **Achim Blumensath*** (blumensath@mathematik.tu-darmstadt.de) and **Bruno Courcelle** (Bruno.Courcelle@labri.fr). *On the Monadic Second-Order Transduction Hierarchy.*

We compare classes of finite relational structures via monadic second-order transductions. More precisely, we study the preorder

$$\mathcal{C} \sqsubseteq \mathcal{K} \quad \text{iff} \quad \mathcal{C} \subseteq \tau(\mathcal{K}) \quad \text{for some transduction } \tau\,.$$

If we only consider classes of *incidence structures* we can completely describe the resulting hierarchy. It is linear of order type $\omega + 3$. Each level can be characterised in terms of a suitable variant of tree-width. Canonical representatives of the various levels are: the class of (i) all trees of height $n$, for $n \in \mathbb{N}$; (ii) all paths; (iii) all trees; and (iv) all grids. (Received September 11, 2008)